

What is claimed is:

SUB A1

1. A method of providing a document in electronic form, the document having a plurality of pages, the method comprising:

(a) providing a print queue of printing data for producing the document in a printed format;

(b) converting the print queue into a plurality of viewable files, each viewable file representing one of the pages of the document and preserving the printed format, without an intermediary step of producing hard copies of the pages;

(c) providing page-heading data representing an organization of the document;

(d) parsing the page-heading data to produce an index;

(e) providing software to view the viewable files and to search through the viewable files in accordance with the index; and

(f) providing the plurality of viewable files, the index and the software in persistent storage.

SUB D2

2. The method of claim 1, wherein:

the printing data in the print queue comprise data to be rasterized to produce the document;

step (b) comprises rasterizing the data to be rasterized; and

the viewable files are bitmap files.

3. The method of claim 2, wherein the data to be rasterized comprise PostScript data.

4. The method of claim 2, wherein step (b) comprises applying compression to the bitmap files.

5. The method of claim 4, wherein the compression is a lossy compression.

6. The method of claim 1, wherein:

the document is organized under a plurality of headings; and

the index associates each heading with a page on which the heading appears.

7. The method of claim 6, wherein the index associates each heading with a first page on which the heading appears.

8. The method of claim 6, wherein the software comprises software to receive a typed name of a heading and to retrieve the page associated with that heading in the index.

9. The method of claim 6, wherein the software comprises software to show a list of headings, to receive a selection of a heading from the list and to retrieve the page associated with that heading in the index.

10. The method of claim 1, wherein the software is written in a device-independent language.

11. The method of claim 10, wherein the device-independent language is Java.

12. The method of claim 1, wherein the software is written to run within a World Wide Web browser.

13. A persistent electronic storage medium for storing a document in electronic form, the document having a plurality of pages, the medium having written thereon:

(a) a plurality of viewable files, each viewable file representing one of the pages of the document and preserving a printed format of said one of the pages;

(b) an index representing an organization of the document; and

(c) software to view the viewable files and to search through the viewable files in accordance with the index.

14. The medium of claim 13, wherein the viewable files are bitmap files.

15. The medium of claim 14, wherein the bitmap files have a compression applied thereto.

16. The medium of claim 15, wherein the compression is a lossy compression.

17. The medium of claim 13, wherein:

the document is organized under a plurality of headings; and

the index associates each heading with a page on which the heading appears.

18. The medium of claim 17, wherein the index associates each heading with a first page on which the heading appears.

19. The medium of claim 17, wherein the software comprises software to receive a typed name of a heading and to retrieve the page associated with that heading in the index.

20. The medium of claim 17, wherein the software comprises software to show a list of headings, to receive a selection of a heading from the list and to retrieve the page associated with that heading in the index.

21. The medium of claim 13, wherein the software is written in a device-independent language.

22. The medium of claim 21, wherein the device-independent language is Java.

23. The medium of claim 13, wherein the software is written to run within a World Wide Web browser.

24. The medium of claim 23, wherein a distribution file for the World Wide Web browser is written on the medium.

25. A system for allowing a user to access a document in electronic form, the document having a plurality of pages, the system comprising:

(a) a persistent electronic storage medium having written thereon:

(i) a plurality of viewable files, each viewable file representing one of the pages of the document and preserving a printed format of said one of the pages;

(ii) an index representing an organization of the document; and

(iii) software to view the viewable files and to search through the viewable files in accordance with the index; and

(b) a computer for accessing the medium, running the software and allowing the user

to interact with the software.

SUB D47 26. The system of claim 25, wherein the viewable files are bitmap files.

27. The system of claim 26, wherein the bitmap files have a compression applied thereto.

5 28. The system of claim 27, wherein the compression is a lossy compression.

29. The system of claim 25, wherein:

the document is organized under a plurality of headings; and

the index associates each heading with a page on which the heading appears.

30. The system of claim 29, wherein the index associates each heading with a first page on which the heading appears.

31. The system of claim 29, wherein the software comprises software to receive a typed name of a heading and to retrieve the page associated with that heading in the index.

32. The system of claim 29, wherein the software comprises software to show a list of headings, to receive a selection of a heading from the list and to retrieve the page associated with that heading in the index.

33. The system of claim 25, wherein the software is written in a device-independent language.

34. The system of claim 33, wherein the device-independent language is Java.

35. The system of claim 25, wherein:

20 the computer has a World Wide Web browser installed thereon; and

the software is written to run within the World Wide Web browser.

36. The system of claim 25, wherein:

the medium is installed on a server of a network; and

the computer is connected to the network to access the medium on the server.

25 37. The system of claim 36, wherein the network is a local area network.

38. The system of claim 36, wherein the network is a virtual private network.

39. The system of claim 36, wherein the network is the Internet.

SUB A27

40. A method of providing a page of a document in electronic form, the document having a plurality of pages with one or more items on each page, the page having a selected item thereon, the method comprising:

(a) providing page-heading data representing an organization of the document;

(b) parsing the page-heading data to determine a page on which the selected item is located and a position of the selected item on the page and to output highlighting information representing the position;

(c) providing a print queue of printing data for producing the document in a printed format;

(d) converting the print queue into a viewable file representing the page in said printed format, without an intermediary step of producing a hard copy of the page;

(e) providing software to view the viewable file and to highlight the position of the selected item on the page; and

(f) providing the viewable file, the highlighting information and the software on persistent storage.

SUB D67

41. The method of claim 40, further comprising:

(g) determining a reverse-side page corresponding to the page determined in step (b);

(h) converting the print queue into a reverse-side viewable file representing the reverse-side page; and

(i) providing the reverse-side viewable file on the persistent storage; and

wherein the software comprises software for selectively viewing either the viewable file or the reverse-side viewable file.

42. The method of claim 40, wherein the software comprises software for selectively

viewing the viewable file either with or without the selected item highlighted.

43. The method of claim 40, wherein the software comprises software for viewing additional material which is associated with the selected item but which is not included in the document.

5 44. The method of claim 43, wherein the additional material comprises a bill associated with the selected item.

45. The method of claim 43, wherein the additional material comprises a link to view the viewable file.

46. The method of claim 43, wherein the link permits selection of the viewable file with or without highlighting for the selected item.

47. The method of claim 40, wherein:  
the printing data in the print queue comprise data to be rasterized to produce the document;

step (d) comprises rasterizing the data to be rasterized; and

the viewable file is a bitmap file.

48. The method of claim 47, wherein the data to be rasterized comprise PostScript data.

49. The method of claim 47, wherein step (d) comprises applying compression to the bitmap file.

50. The method of claim 49, wherein the compression is a lossy compression.

51. The method of claim 40, wherein the software is written in a device-independent language.

52. The method of claim 51, wherein the device-independent language is Java.

53. The method of claim 40, wherein the software is written to run within a World Wide Web browser.

SUB C47

54. A persistent electronic storage medium for storing a page of a document in electronic form, the document having a plurality of pages with one or more items on each page, the page having a selected item thereon, the medium having stored thereon:

(a) highlighting information representing a position of the selected item on the page;

(b) a viewable file representing the page and preserving a printed format of the page;

and

(c) software to view the viewable file and to highlight the position of the selected item on the page.

55. The medium of claim 54, wherein:

the medium further has stored thereon a reverse-side viewable file representing a reverse-side page corresponding to the page; and

the software comprises software for selectively viewing either the viewable file or the reverse-side viewable file.

56. The medium of claim 54, wherein the software comprises software for viewing the viewable file either with or without the selected item highlighted.

57. The medium of claim 54, wherein the software comprises software for viewing additional material which is associated with the selected item but which is not included in the document.

58. The medium of claim 57, wherein the additional material comprises a bill associated with the selected item.

59. The medium of claim 57, wherein the additional material comprises a link to view the viewable file.

60. The medium of claim 59, wherein the link permits selection of the viewable file with or without highlighting for the selected item.

61. The medium of claim 54, wherein the viewable file is a bitmap file.

62. The medium of claim 61, wherein the bitmap file has compression applied thereto.

63. The medium of claim 62, wherein the compression is a lossy compression.

64. The medium of claim 54, wherein the software is written in a device-independent language.

65. The medium of claim 64, wherein the device-independent language is Java.

66. The medium of claim 54, wherein the software is written to run within a World Wide Web browser.

67. The medium of claim 66, wherein a distribution file for the World Wide Web browser is written on the medium.

68. A system for allowing a user to access a page of a document in electronic form, the document having a plurality of pages with one or more items on each page, the page having a selected item thereon, the system comprising:

(a) a persistent electronic storage medium having written thereon:

(i) highlighting information representing a position of the selected item on the page;

(ii) a viewable file representing the page and preserving a printed format of the page; and

(iii) software to view the viewable file and to highlight the position of the selected item on the page; and

(b) a computer for accessing the medium, running the software and allowing the user to interact with the software.

69. The system of claim 68, wherein:  
the medium further has stored thereon a reverse-side viewable file representing a reverse-side page corresponding to the page; and

the software comprises software for selectively viewing either the viewable file or the



reverse-side viewable file.

70. The system of claim 68, wherein the software comprises software for viewing the viewable file either with or without the selected item highlighted.

71. The system of claim 68, wherein the software comprises software for viewing additional material which is associated with the selected item but which is not included in the document.

72. The system of claim 71, wherein the additional material comprises a bill associated with the selected item.

73. The system of claim 71, wherein the additional material comprises a link to view the viewable file.

74. The system of claim 73, wherein the link permits selection of the viewable file with or without highlighting for the selected item.

75. The system of claim 68, wherein the viewable file is a bitmap file.

76. The system of claim 75, wherein the bitmap file has compression applied thereto.

77. The system of claim 76, wherein the compression is a lossy compression.

78. The system of claim 68, wherein the software is written in a device-independent language.

79. The system of claim 78, wherein the device-independent language is Java.

80. The system of claim 68, wherein:

the computer has a World Wide Web browser installed thereon; and

the software is written to run within the World Wide Web browser.

81. The system of claim 68, wherein:

the medium is installed on a server of a network; and

the computer is connected to the network to access the medium on the server.

82. The system of claim 81, wherein the network is a local area network.

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